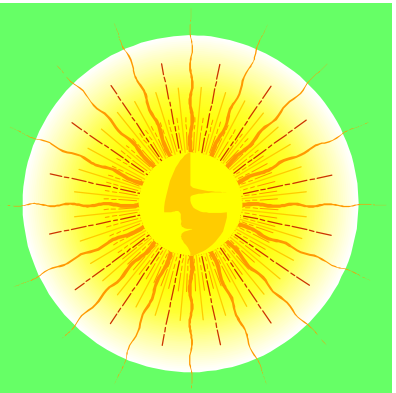
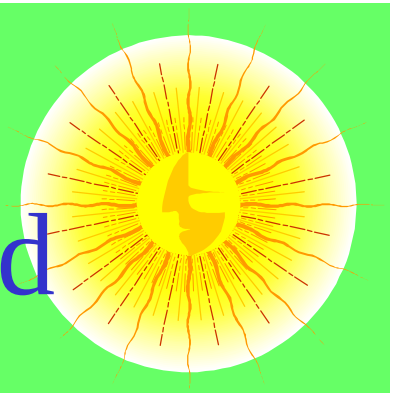
Prescriptive Passive Solar



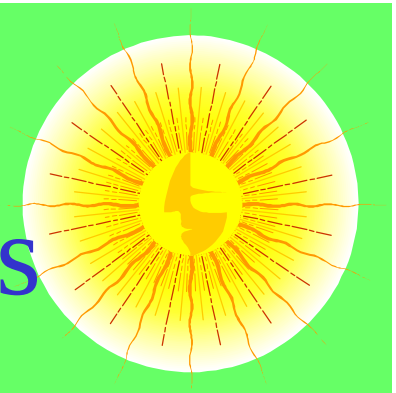
Using Tax Credit to Leverage High Performance Designs

High Benchmark Standard



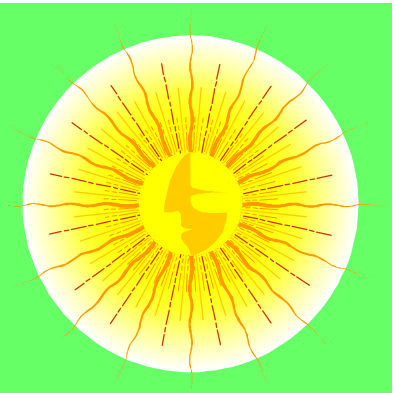
- Super Good Cents - 1986
  - Incentives
  - Training
  - Quality Control
  - **Regional Marketing!**
- Research & Demo (RCDP)
- (Long Term) Super Good Cents - 1992

Residential Energy Codes



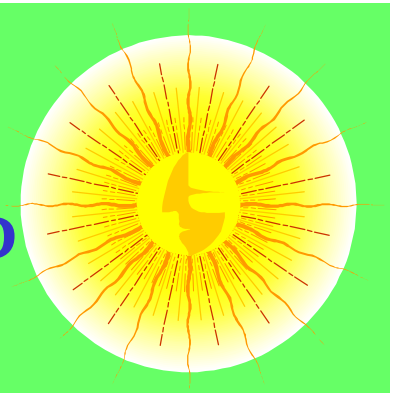
- 1991 - Washington
- 1992 - Oregon
- Both are roughly 20-30% over MEC

Set A Target



- Provide people with a goal
- Strengthens existing code
- Use Non-energy Reasons to buy

Green Building Anyone?

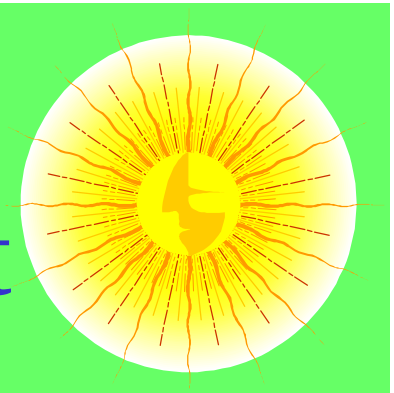


- Indoor Air Quality
- Environmental Impact
- Resource Efficiency
- Community & Livability
- Energy Efficiency

Lots of Good Stuff Happening

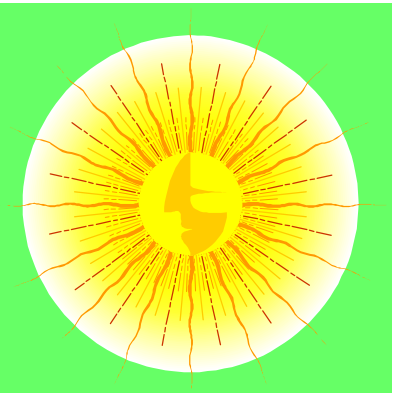
- US DOE - www.sustainable.doe.gov
- US Green Building Council
- Energy Efficient Building Association
- Rocky Mountain Institute
- City of Austin - Sustainable Bldg. Guidelines
- City of Boulder - Green Points
- Denver Green Builder Program
- Portland General Electric - Earth Smart

Passive Solar Tax Credit



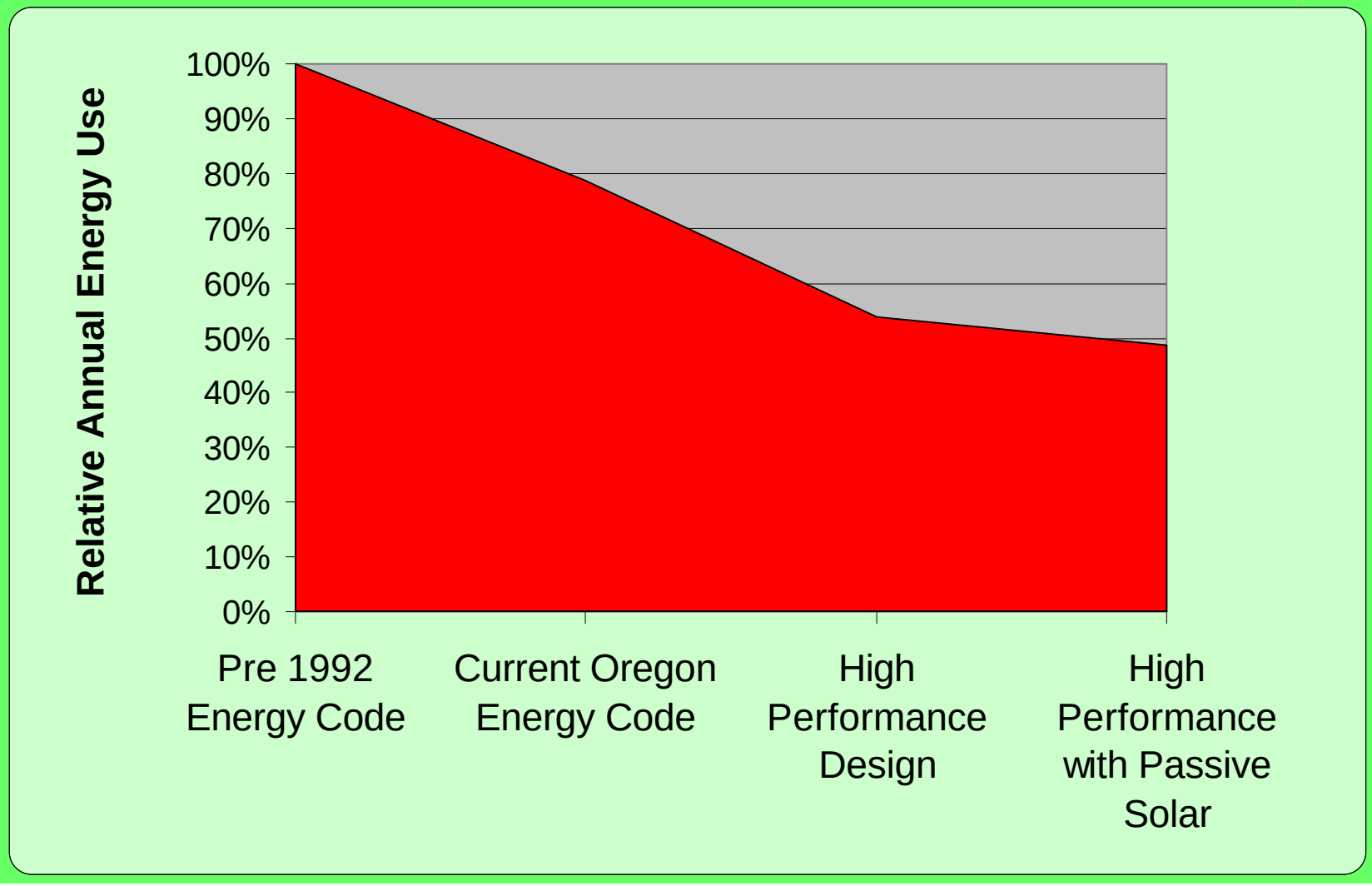
- Established in 1978
  - 1978-1989 1,512 homes
  - 1989-1998 87 homes
- 10% of total annual energy from solar
- Limited to $1500
- $0.60 per kWh saved per year

Design Comparison

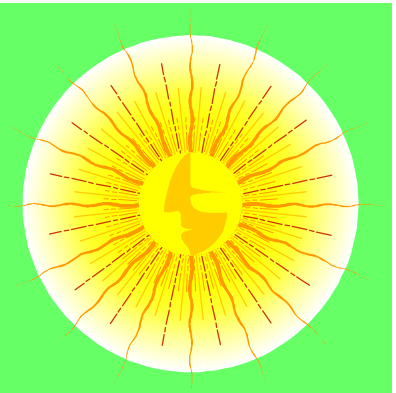


Component	Code	High Perf.
Window U	0.40	0.35
Walls	R-21	R-26A
Floor	R-25	R-30
Roof (vault)	R-30	R-38
Furnace	78%	90%
Ducts	R8	R8 + Sealed

Moving the Target

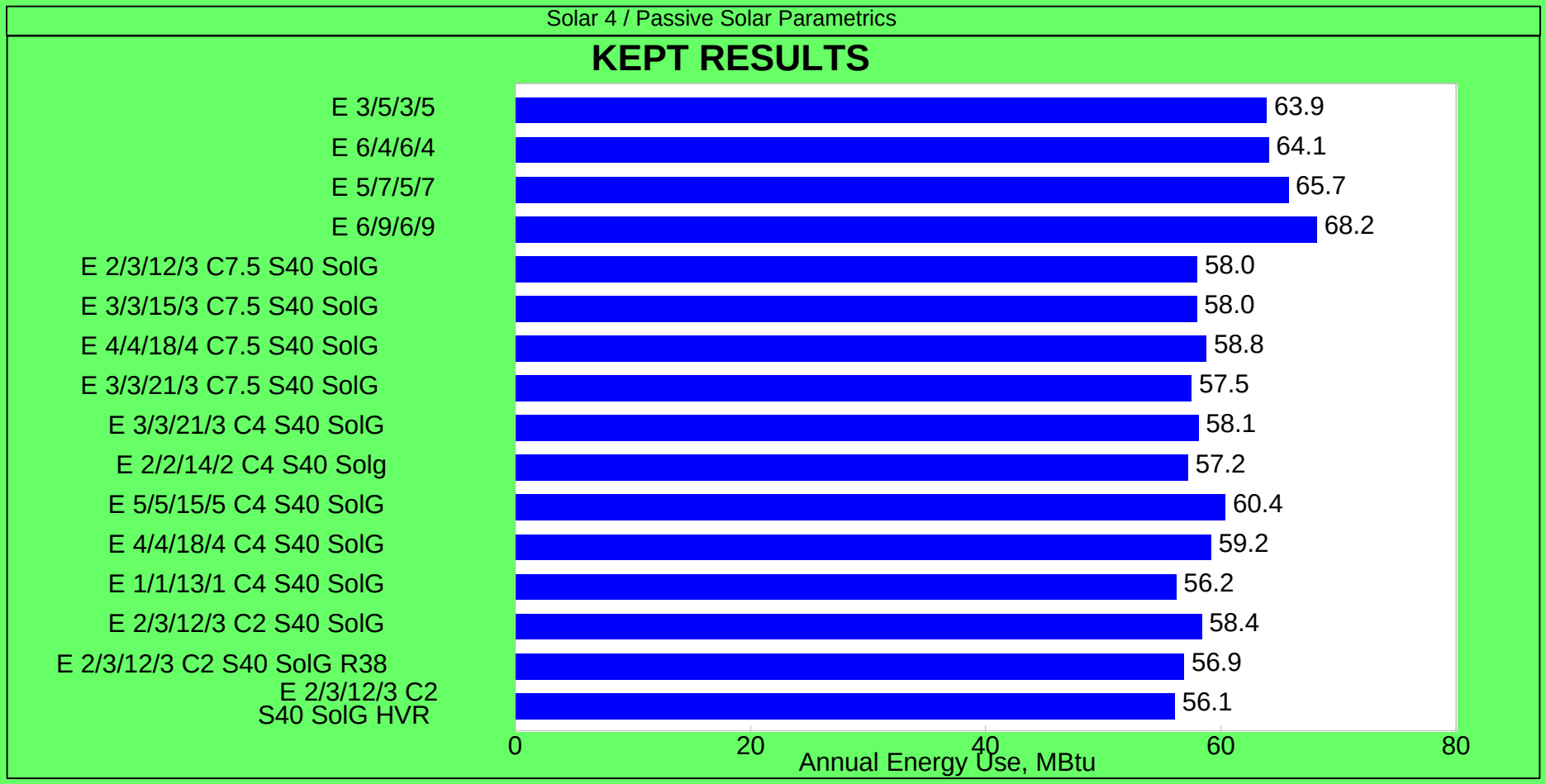


NW Oregon - Code



- Window U-factor 0.32 (0.35 w/night insulation)
- Solar Glazing 10% of floor area
  Solar Gain = 65+%
- Overhangs 80% of south windows
- Thermal Storage DHC = 40x $Area_{south}$
- Ducts Meet OOE Standards
- Owners Manual Required

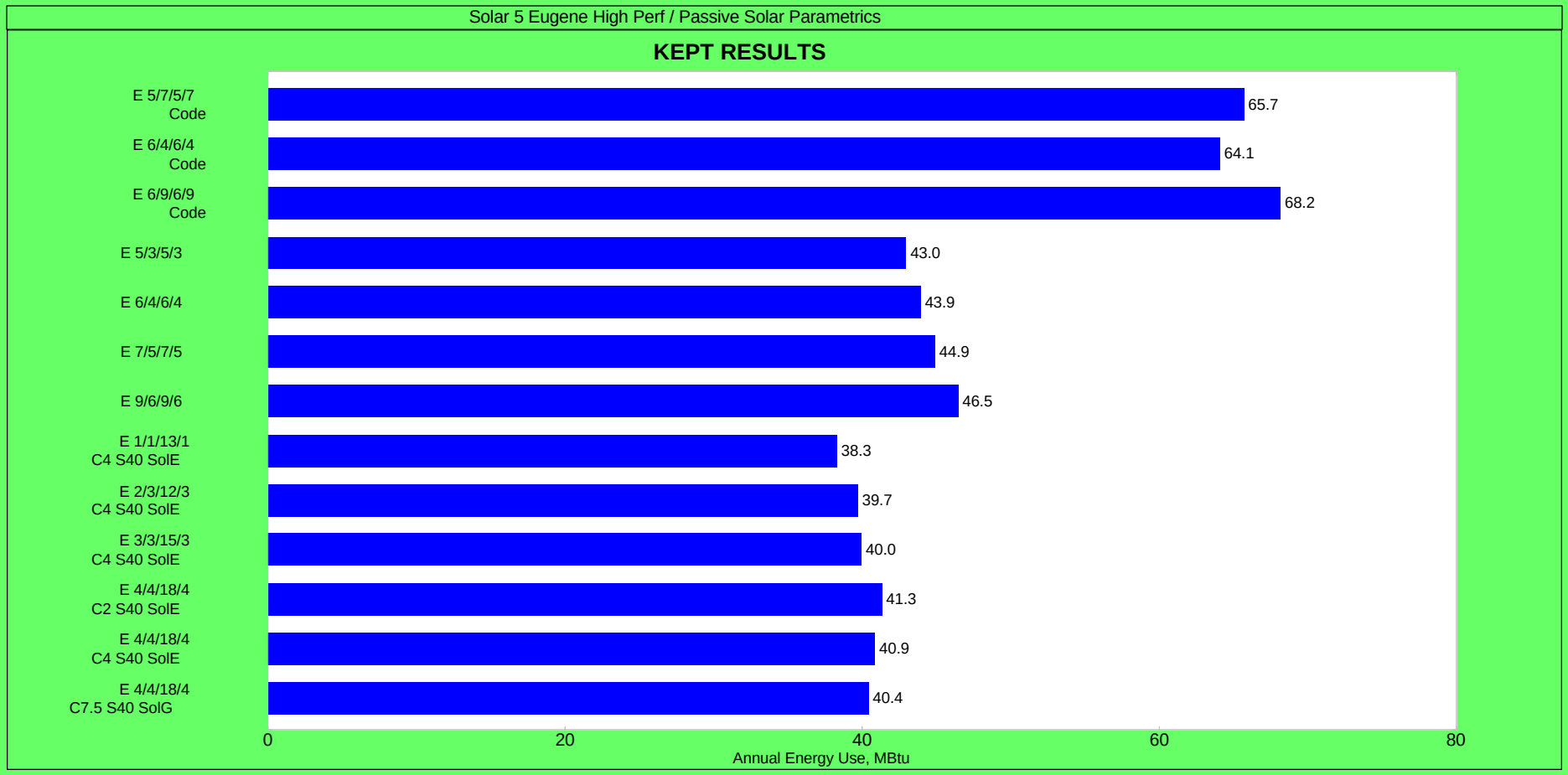
Eugene - Code Minimum



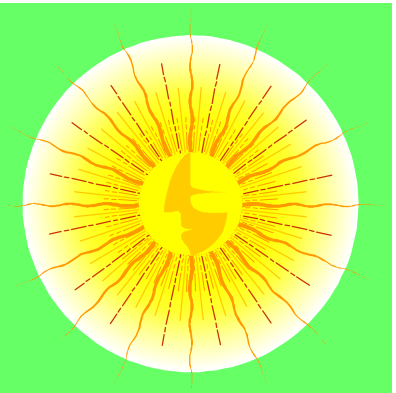
NW Oregon - High Performance

- Window U-factor 0.35
- Solar Glazing 10% of floor area
  Solar Gain = 60+%
- Overhangs 80% of south windows
- Thermal Storage DHC = 30x $Area_{south}$
- Ducts Meet OOE Standards
- Owners Manual Required

Eugene - High Performance

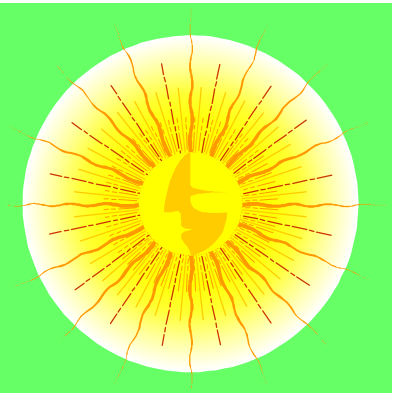


Lessons Learned



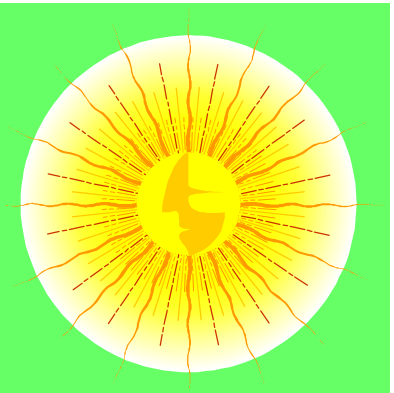
- 10% minimum South Glass
- West glass overheating not really a problem with new glazings
- Night Insulation a must in NW Oregon
- Thin mass is better

What's Next

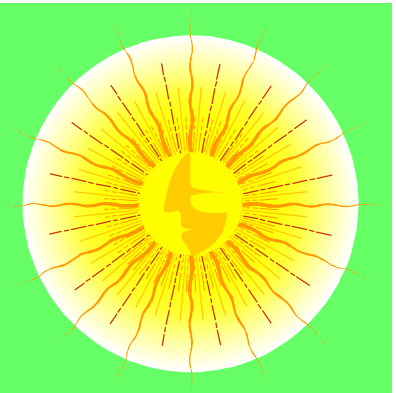


- Complete paths for Eastern and Southwestern Oregon
- Peer Review
- Prescriptive Requirement Guide
  (draft available upon request)
- Example Homes
- Integration with Green Building Efforts

Thank You

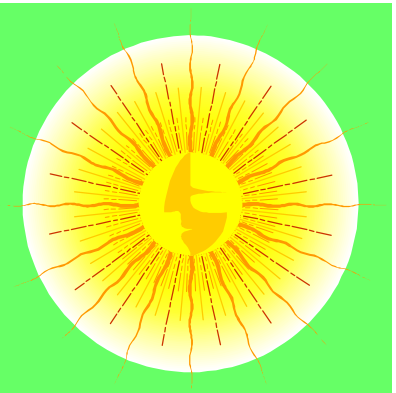


Outline



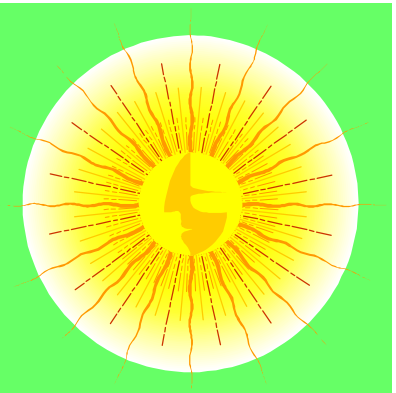
- Building a Code
- Green Building
- Passive Solar Design Tax Credit

Support



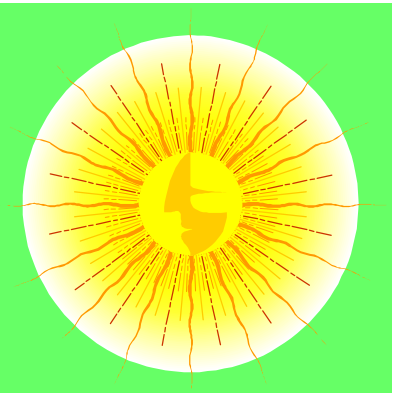
- Bonneville Power Administration
- Regional Utilities and Utility Commissions
- State Energy Offices
- NW Power Planning Council
- Political Legislative Support

Why Only 87?



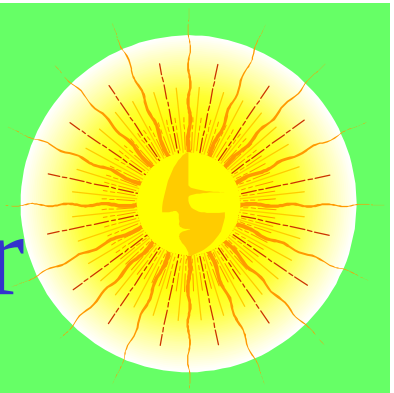
- Not popular
- Cost
- “Too rainy in Oregon”
- Every home is custom
- No marketing

What Can We Do?



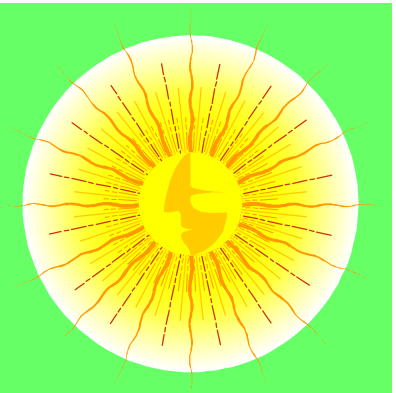
- Provide Technical Support
- Set Standards
- Promote New Technologies
- Offer Tax Incentives

Barriers to Going Farther



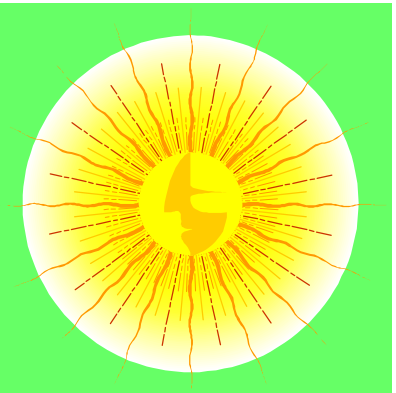
- “Code is energy efficient enough”
- “Global Warming sounds good to me”
- “Nobody can afford more”
- Reduced Interest and Support

Super Good Cents



- Provided cost data
- Proved it could be done
- Reached about 25% of new electric homes
- Foundation of Market Transformation

What People Want



- Shelter, Privacy
- Affordable, Financial Stability
- Safe Community
- Pleasant Inviting Space
- Not Harmful to the Environment